

MARSHMALLOW PEEPS: A YUMMY SUBJECT

Marshmallow Peeps come 10 in a box. Each peep is 4 cm long. Astrid is making a train with the 10 peeps. How long is her train if the peeps are lined up in a row with a 1 cm space between them?

What is the length of her train if she has enough boxes to use 15 peeps? What is your answer for 20 peeps, 25 peeps and 30 peeps? What about 150 peeps? What about 63 peeps?

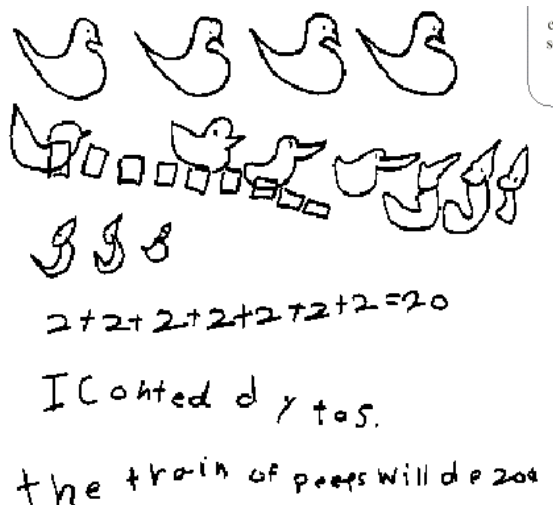
What is the length of her train if she has enough boxes to use any amount of peeps that she wishes?

What can you say about the number of spaces between the peeps as compared to the number of peeps? Translate your thinking in a formula.

Generate a table, a graph and an equation for this problem.

Design a function for this problem. What is the domain of this function? What is the meaning of the slope? What is the meaning of the y-intercept?

A FIRST grader:



A FOURTH grader:

10 peeps	=	10 x 4 cm	=	40 cm
9 spaces	=	9 x 1 cm	=	9 cm

train length	=	49 cm
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OR

A peep and a space has a length of 5 cm.

Nine of these is $9 \times 5 \text{ cm} = 45 \text{ cm}$.

Plus one more peep is $45 \text{ cm} + 4 \text{ cm} = 49 \text{ cm}$.

Entering MIDDLE SCHOOL (5/6)

I see that the number of spaces is always one less than the number of peeps. LOOK:

$$10 \text{ peeps} = (10 \times 4) + (9 \times 1) \text{ cm}$$

$$15 \text{ peeps} = (15 \times 4) + (14 \times 1) \text{ cm}$$

$$20 \text{ peeps} = (20 \times 4) + (19 \times 1) \text{ cm}$$

$$n \text{ peeps} = (n \times 4) + ([n-1] \times 1) \text{ cm}$$

$$= 4n + n - 1 \text{ cm}$$

$$= 5n - 1 \text{ cm}$$

I can calculate the length by first taking five times the number of peeps and then subtract 1.

Middle to HIGH SCHOOL (7 - 9)

TABLE

	# peeps	length	
	5	24	
	10	49	
	15	74	
	20	99	
	25	124	
↓	↓	↓	↓
+5	n	5n - 1	+25
	→		
	FUNCTION		

Domain: #peeps ≥ 1

Range: length ≥ 4

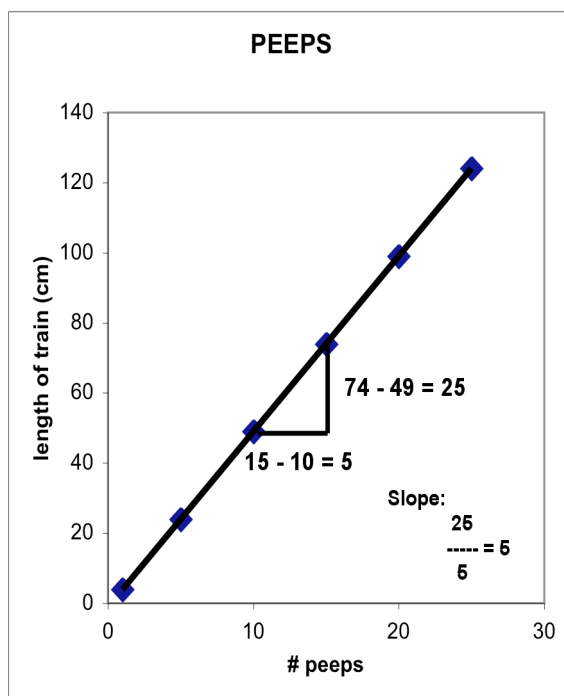
Slope: Increase in train length for each additional peep.

y-intercept: correction for having one less space than peeps.

Is it okay to "connect the dots" here?

EQUATION: $y - y_1 = m(x - x_1)$

$$y = 5x - 1$$



For a more detailed description see: de Groot, C. (2001). Marshmallow Peeps: Fostering a K-12 Connection. *New York State Mathematics Teacher Journal*, V51 (1), 21-30.